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ABSTRACT

Objectives of a Kentucky project were to analyze existing needs and barriers and potential needs and barriers regarding (1) new and emerging occupations, (2) elimination of discrimination, (3) vocational staff development, and (4) funding vocational education. A statewide planning committee assisted in development of the method and instruments. A Delphi questionnaire was developed and sent to samples of personnel from seven different groups of vocational educators and policy makers in the state. Response and feedback was synthesized and analyzed to determine commonalities and differences, and participants were then asked to reach a consensus of opinion regarding each of ten issues. Results identify future needs and barriers in the following categories: influence of technological and scientific advancements; effects of social changes; how to improve community involvement; role of local, state, and federal government; response to future occupational trends and innovations; how to meet the needs of minorities, disadvantaged, and handicapped; future educational strategies; identification of future problems; occupations which will be eliminated; and need for greater access to occupational education. (Statistical results and description of responses to each question are included along with related recommendations.) (JT)

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Final Report

FORECASTING AND ANALYZING NEEDS AND BARRIERS IN KENTUCKY VOCATIONAL EDUCATION

by

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June 30, 1977

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STATE DEPARTMENT OF EDUCATION
BUREAU OF VOCATIONAL EDUCATION

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CONTENTS

PROJECT ABSTRACT. 1

INTRODUCTION. 2

ACTIVITIES AND ACCOMPLISHMENTS. 3

a. Problem under consideration. 3

b. Methods. 4

c. Results. 6

d. Conclusions/Recommendations. 38

DISSEMINATION ACTIVITIES. 54

SUPPLEMENTAL AND APPENDIX MATERIALS 59

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PREFACE

DELPHI:

The Delphi technique originated at the Rand Corporation in the late 1940's. As the name Delphi suggests, future forecasting is a central element in the process. The technique systematically solicits, collects, evaluates, and tabulates expert opinions, ideas, and intuitions.

Typically, the procedure includes a questionnaire mailed to participants who remain anonymous to one another. The second round of questionnaires asks for estimates as to the probability of each event occurring at a given date in the future. These responses are collated and returned to each respondent who is invited to revise his estimates. The third round responses are made with the knowledge of how others felt. Again, the responses are assembled and reported. If a respondent's estimate does not fall within the range of all conjectures, he is asked to justify his position.

Delphi is used as a basis for planning and decision-making about the future. This technique has proved to be an effective method for long-range forecasting of future trends and events in business and industry. Delphi can become an effective tool for educators and administrators in determining planning priorities and goals. Far too frequently, programs are determined by available funding and pressure from individuals or groups. Little recourse has been open to program developers but to comply. Delphi presents the most probable direction for the future and as such would enable directors to plan and implement the most condusive programs toward societal betterment. The individual and the society would benefit as a result of getting the most from monies spent.

PROJECT ABSTRACT

TITLE OF PROJECT: FORECASTING AND ANALYZING NEEDS AND BARRIERS IN KENTUCKY VOCATIONAL EDUCATION

PROJECT DURATION: Beginning Date 1 July 1976
Ending Date 30 June 1977

OBJECTIVES:

1. Establish a statewide ad. hoc. planning committee to assist with the development and implementation of the system and instruments.
2. Develop and administer instrument to determine existing vocational education program needs and barriers.
3. Forecast potential problem areas (barriers) and needs in regular vocational programs.
4. Results transmitted to the Bureau of Vocational Education for duplication and distribution.

PROCEDURES: The overall design of the project fell into four main categories. These categories were as follows:

1. Plan and develop the structure, instruments, and evaluation devices.
2. Determine the status of existing vocational education programs.
3. Forecast potential needs and barriers of vocational education.
4. Synthesize results into final report for dissemination.

CONTRIBUTIONS TO EDUCATION: This project resulted in a relevant information and data base from which future planners and decision makers can more ably meet the needs of students entering vocational education.

PRODUCTS DEVELOPED: Products developed were the Delphi questionnaire results and the recommendations based on those results.

INTRODUCTION

Delphi is the name that has been applied to a technique designed to elicite opinions from a group with the aim of generating a group response. Delphi replaces direct confrontation and debate by a planned, anonymous, program of sequential interragation through a questionnaire.

This technique was applied to distinct groups within the Commonwealth of Kentucky. Samples of personnel from the following areas served as participants:

a) Bureau of Vocational Education
b) Post-secondary vocational education administrators
c) Secondary vocational education program administrators/counselors/directors/coordinators/teachers
d) Representatives from each of the 15 identified career education clusters
e) Legislative research committee
f) Governor's office
g) 1202 Commission

Questions were formulated to solicit feedback regarding needs and barriers in the following areas:

a) new and emerging occupations
b) elimination of discrimination
c) staff development
d) funding or financial
e) sociological
f) political
g) technological

Participant response and feedback was synthesized and analyzed to determine commonalities and differences. The participants were then asked to reach a consensus of opinion regarding each issue.

The results of this project are some fundamental bases or foundations upon which to plan vocational education programs and goals for the future. Delphi should enable educators and planners to gear up to meet the needs of the individuals in vocational education before the needs actually arise and must be met through "brushfire" techniques.

ACTIVITIES AND ACCOMPLISHMENTS

1. Problem Under Consideration

PROJECT GOAL

The project was to analyze existing needs and barriers and potential needs and barriers regarding (a) new and emerging occupations, (b) elimination of discrimination, (c) vocational staff development, and (d) funding vocational education.

OBJECTIVES

1. Establish a statewide ad. hoc. planning committee to assist with the the development and implementation of the system and instruments.
2. Develop and administer instrument to determine existing vocational education program needs and barriers.
3. Forecast potential problem areas (barriers) and needs in regular vocational programs.
4. Results were transmitted to the Bureau of Vocational Education for duplication and distribution.

LIMITATIONS

A representative selected sample was utilized as the project population to allay the expense of total coverage.

The project staff found the synthesis of questionnaire responses took a subjective interpretation that was not readily condusive to computerization. The use of a computer was attempted and rejected.

The project was also limited by the mail service to and from Morehead State University. Many mailings were damaged beyond salvage and presented a slow-up in accomplishing the project task according to schedule.

The project was limited somewhat by participants returning their responses after the deadline set by the project staff.

2. Methods:

The project staffs from Morehead State University and University of Louisville coordinated all activities within the established proposal framework. The overall design of the project fell into four main categories. These categories were as follows:

1. Planning and development of the structure, instruments, and evaluation devices.
2. Deterimining the status of exisitng vocational education programs.
3. Forecasting potential needs and barriers of vocational education.
4. Synthesize results into final report for dissemination.

The first endeavor undertaken was the establishment of a statewide ad. hoc. planning committee to assist with the development and implementation of the project. The planning committee met twice, June 11, 1976 and April 11, 1977. (See Appendix A.)

Project staff then began the arduous task of developing the first Delphi questionnaire. Based on the recommendations of the planning committee, the project launched directly into the delphi technique. The fundamental reasoning behind this decision was that there was already available sufficient data on the current status of existing needs and barriers to vocational education. This first questionnaire was sent to the planning committee members and to a selected pilot group.

Minor modification were made to the original instrument and mail out of Delphi A was made to selected individuals as noted in the introduction page 2 . (See Appendix B.) Also, Delphi A was approved for mailing by the Bureau of Vocational Education.

Results of questionnaire Delphi A were synthesized into identified future needs and barriers. An attempt was made to computerize results,

however, this proved excessively subjective and expensive. The project staff broke the results into easily understood percentage statistics. The statistical analysis was incorporated into the development of Delphi B.

Results of Delphi B were synthesized and analyzed. Six of the ten items on Delphi B returned 90% or higher common reaction or response. Due to the high degree of response agreement Delphi C was developed containing only the remaining four items where disparity remained. (See Appendix E.)

The responses to Delphi C culminated in the final results in ascertaining future needs and barriers in Kentucky vocational education. These responses were then broken into specific detailed results. These results are recorded in section 3 of this final report.

Responses were analyzed and recommendation as to how the project staff viewed the possible adaption of project results into future vocational education programs. These recommendations are recorded in section 5 of this report.

All responses in the Delphi technique are important, therefore, all responses are recorded and contained in Appendix F of this report. (Available from the RCU upon specific request.)

3. RESULTS

The results of the project were broken into two sections, the statistical results, and the indepth description of responses to each question or section.

STATISTICAL ANALYSIS OF RESPONSES

	Percentage of Agreement on Questionnaires		
	Q #1	Q #2	Q #3
1. WHAT FUTURE TECHNOLOGICAL AND SCIENTIFIC ADVANCEMENTS WILL INFLUENCE OCCUPATIONAL EDUCATION?			
The development of alternatives in energy and in labor-saving devices will affect occupational education in the future.	63%	91%	*
2. HOW WILL SOCIAL CHANGES ALTER FUTURE EDUCATION IN KENTUCKY?			
a) A de-emphasis on the college education and an increase in the social acceptance of occupation requiring vocational training will change education in the future.	40%	84%	95%
b) A change in the roles of the sexes will alter future education.	18%	62%	74%
3. HOW CAN OCCUPATIONAL EDUCATION IMPROVE THE QUALITY OF COMMUNITY AWARENESS AND INVOLVEMENT?			
Occupational education should interact more with the community and its resources by establishing public relations programs, advisory and craft committees and work study programs.	56%	97%	*
4. WHAT ROLE WILL LOCAL, STATE, AND FEDERAL GOVERNMENT PLAY IN FUTURE OCCUPATIONAL EDUCATION PROGRAMS AND FUNDING?			
Local, state, and/or federal government will play greater roles in future occupational education programs and funding.	85%	100%	*
5. HOW SHOULD OCCUPATIONAL EDUCATION REACT TO FUTURE OCCUPATIONAL TRENDS AND INNOVATIONS?			
Occupational education should become aware of occupational trends and innovations, carefully evaluate them, and alter programs as needs change.	93%	100%	*

	Percentage of Agreement on Questionnaires		
	Q #1	Q #2	Q #3
6. HOW CAN OCCUPATIONAL EDUCATION BETTER MEET THE NEEDS OF MINORITIES, DISADVANTAGED, AND HANDICAPPED?			
Occupational education should screen the skills of handicapped and upgrade programs by funding the instructors and facilities required.	58%	83%	81%
7. IN YOUR OPINION, HOW SHOULD OCCUPATIONAL EDUCATION BE TAUGHT IN THE FUTURE?			
There will be greater cooperation with local business and industry in the future.	47%	94%	*
8. WHAT WILL BE THE MOST DIFFICULT PROBLEM FOR FUTURE OCCUPATIONAL EDUCATION?			
Funding will be the most difficult problem in order that vocational training may be responsive to trends, changes, and supply and demand.	75%	88%	91%
9. WHAT OCCUPATIONS DO YOU SEE BEING ELIMINATED, IN YOUR FIELD, IN THE NEXT FIVE YEARS?			
Respondents foresaw no occupations being eliminated in their fields but many being altered as technology expands.	60%	84%	91%
10. SHOULD EVERYONE HAVE GREATER ACCESS TO OCCUPATIONAL EDUCATION THAN THEY PRESENTLY HAVE? (Please explain)			
Occupational education should be more available and people made more aware of the existing opportunities in occupational education.	82%	94%	*

*Did not include on Questionnaire #3 because of high percentage of agreement as result of Questionnaire #2.

HOW WILL SOCIAL CHANGES ALTER FUTURE EDUCATION IN KENTUCKY?*

CATEGORIZED RESPONSES TO QUESTIONNAIRE ONE

	CATEGORY	PERCENTAGED RESPONDED
1.	THERE WILL BE A DE-EMPHASIS ON THE COLLEGE EDUCATION AND AN INCREASE IN THE SOCIAL ACCEPTANCE OF OCCUPATIONS REQUIRING VOCATIONAL TRAINING.	40%
2.	THERE WILL BE A CHANGE IN THE ROLE OF THE SEXES	18%
3.	THERE WILL BE AN INCREASED AMOUNT OF LEISURE TIME	9%
4.	URBANIZATION WILL TAKE PLACE.	8%
5.	SOCIAL CHANGE WILL HAVE AN AFFECT ON OCCUPATIONAL EDUCATION (NOT SPECIFIC).	7%
6.	BIRTH RATE AND CONTROL WILL HAVE AFFECT	5%
7.	RURALIZATION WILL TAKE PLACE.	3%
8.	MORAL CHANGES WILL HAVE AN AFFECT	3%
9.	PEOPLE WILL BE LIVING A MORE NOMADIC LIFE	2%
10.	STANDARDS OF LIVING WILL INCREASE	2%
11.	SOCIAL CHANGES WILL RESULT IN AN UNDESIRABLE AFFECT	1%
12.	STUDENTS WILL FINISH HIGH SCHOOL EARLIER.	1%
13.	MORE PRIVATE SCHOOLS.	1%
14.	SOCIAL CHANGES WILL NOT ALTER FUTURE EDUCATION IN KENTUCKY.	1%

*THE RESPONSES WERE MORE REFLECTIVE OF "WHAT SOCIAL CHANGES" RATHER THAN "HOW WILL SOCIAL CHANGES."

SHOULD EVERYONE HAVE GREATER ACCESS TO OCCUPATIONAL EDUCATION THAN THEY PRESENTLY HAVE?

CATEGORIZED RESPONSES TO QUESTIONNAIRE ONE

CATEGORY	PERCENTAGE RESPONDED
1. OCCUPATIONAL EDUCATION SHOULD BE MORE AVAILABLE AND PEOPLE MADE MORE AWARE OF THE EXISTING OPPORTUNITIES IN OCCUPATIONAL EDUCATION.	82%
2. ADEQUATE OCCUPATIONAL EDUCATION IS AVAILABLE AND ACCESSIBLE TO THOSE WHO DESIRE IT.	13%

WHAT OCCUPATIONS DO YOU SEE BEING ELIMINATED IN YOUR FIELD IN THE NEXT FIVE YEARS?

CATEGORIZED RESPONSES TO QUESTIONNAIRE ONE

CATEGORY	PERCENTAGE RESPONDED
1. NO OCCUPATIONS WILL BE ELIMINATED IN MY FIELD BUT MANY MAY BE ALTERED AS TECHNOLOGY EXPANDS.	60%
2. SOME OCCUPATIONS WILL PLAY A SMALLER ROLE IN THE NEXT FIVE YEARS	32%

WHAT WILL BE THE MOST DIFFICULT PROBLEM FOR FUTURE OCCUPATIONAL EDUCATION?

CATEGORIZED RESPONSES TO QUESTIONNAIRE ONE

	CATEGORY	PERCENTAGE RESPONDED
1.	FUNDING WILL BE THE MOST DIFFICULT PROBLEM IN ORDER THAT VOCATIONAL TRAINING MAY BE RESPONSIVE TO TRENDS, CHANGES, AND SUPPLY AND DEMAND.	75%
2.	SECURING QUALIFIED TRAINED TEACHERS AND ADMINISTRATORS.	11%
3.	ACCEPTANCE OF OCCUPATIONAL EDUCATION.	10%
4.	GETTING INDIVIDUALS INTO PROPER PROGRAMS.	6%
5.	ACCOUNTABILITY.	1%
6.	TO EDUCATE MINORITIES DISADVANTAGED AND HANDICAPPED	1%
7.	PLAYING TOO LARGE OF A ROLE	1%
8.	RED TAPE, PAPER WORK, AND ADMINISTRATIVE COSTS.	1%
9.	ITS LIMITED ROLE.	1%

IN YOUR OPINION, HOW SHOULD OCCUPATIONAL EDUCATION BE TAUGHT IN THE FUTURE?

CATEGORIZED RESPONSES TO QUESTIONNAIRE ONE

	CATEGORY	PERCENTAGE RESPONDED
1.	THERE WILL BE GREATER COOPERATION WITH LOCAL BUSINESS AND INDUSTRY.	47%
2.	OCCUPATIONAL EDUCATION SHOULD BE INDIVIDUALIZED AND COMPETENCY BASED.	22%
3.	OCCUPATIONAL EDUCATION SHOULD BE PROVIDED AT AN EARLIER AGE AND INCORPORATED INTO THE REGULAR ACADEMIC PROGRAMS	15%
4.	ACCORDING TO THE NEEDS OF THE COMMUNITY	4%
5.	WITH THE AID OF MULTI-MEDIA	3%
6.	BY SERVING EVERYONE	2%
7.	SAME AS NOW	1%
8.	THERE WILL BE DIFFERENT PROGRAMS AT DIFFERENT LOCATIONS	1%

IN YOUR OPINION, HOW SHOULD OCCUPATIONAL EDUCATION BETTER MEET THE NEEDS OF MINORITIES, DISADVANTAGED, AND HANDICAPPED?

CATEGORIZED RESPONSES TO QUESTIONNAIRE ONE

	CATEGORY	PERCENTAGED RESPONDED
1.	OCCUPATIONAL EDUCATION SHOULD SCREEN THE SKILLS OF HANDICAPPED AND UPGRADE PROGRAMS BY FUNDING THE INSTRUCTORS AND FACILITIES REQUIRED.	58%
2.	IMPROVE PREVIOUS EDUCATION BY INCORPORATING OCCUPATIONAL EDUCATION AT AN EARLIER AGE	11%
3.	TREAT THEM EQUAL AND PROVIDE NO SPECIAL PROGRAM.	7%
4.	REMOVE CLASSISM.	3%
5.	CAN NOT IMPROVE.	3%
6.	BY PROVIDING AN EDUCATIONAL PROGRAM WHICH WOULD INSTILL A FEELING OF SELF WORTH	3%
7.	MAKE THEM AWARE OF OPPORTUNITIES	3%
8.	INVOLVE THESE INDIVIDUALS IN DECISION MAKING AND PLANNING.	1%

HOW SHOULD OCCUPATIONAL EDUCATION REACT TO FUTURE OCCUPATIONAL TRENDS AND INNOVATIONS?

CATEGORIZED RESPONSES TO QUESTIONNAIRE ONE

CATEGORY	PERCENTAGED RESPONDED
1. OCCUPATIONAL EDUCATION SHOULD BECOME AWARE OF OCCUPATIONAL TRENDS AND INNOVATIONS, CAREFULLY EVALUATE THEM, AND ALTER PROGRAMS AS NEEDS CHANGE.	93%

WHAT ROLE WILL LOCAL, STATE AND FEDERAL GOVERNMENT AND IN FUTURE OCCUPATIONAL EDUCATION AND FUNDING?

CATEGORIZED RESPONSES TO QUESTIONNAIRE ONE

	CATEGORY	PERCENTAGED RESPONDED
1.	LOCAL, STATE AND/OR FEDERAL GOVERNMENT WILL PLAY A GREATER ROLE IN FUTURE OCCUPATIONAL EDUCATION PROGRAMS AND FUNDING.	85%
2.	THE SAME AS NOW	4%
3.	LOCAL, STATE, AND/OR FEDERAL GOVERNMENT WILL INSIST ON ACCOUNTABILITY FOR PROGRAM FUNDS	3%
4.	THE ROLE THAT SOCIETY DICTATES.	1%
5.	MORE INVOLVEMENT IN RESEARCH.	1%

16

HOW CAN OCCUPATIONAL EDUCATION IMPROVE THE QUALITY OF COMMUNITY AWARENESS AND INVOLVEMENT?

CATEGORIZED RESPONSES TO QUESTIONNAIRE ONE

CATEGORY	PERCENTAGED RESPONDED
1. OCCUPATIONAL EDUCATION SHOULD INTERACT MORE WITH THE COMMUNITY AND ITS RESOURCES BY ESTABLISHING PUBLIC RELATIONS PROGRAMS, ADVISORY AND CRAFT COMMITTEES AND WORK STUDY PROGRAMS.	56%
2. BY PRODUCING SKILLED, EMPLOYABLE INDIVIDUALS CAPABLE OF HOLDING RESPONSIBLE POSITIONS IN THE COMMUNITY.	31%
3. SHOULD OR CANNOT IMPROVE.	3%
4. SPEND LESS TIME ON PLANNING	1%

17

WHAT FUTURE TECHNOLOGICAL AND SCIENTIFIC ADVANCEMENTS WILL INFLUENCE OCCUPATIONAL EDUCATION?

CATEGORIZED RESPONSES TO QUESTIONNAIRE ONE

	CATEGORY	PERCENTAGED RESPONDED
1.	DEVELOPMENT OF ALTERNATIVES IN ENERGY AND LABOR SAVING DEVICES.	63%
2.	DEVELOPMENTS IN MACHINERY, EQUIPMENT, TOOLS, AND CONSTRUCTION TECHNIQUES. . . .	13%
3.	DEVELOPMENTS IN TRANSPORTATION.	12%
4.	DEVELOPMENTS IN THE MEDICAL AND HEALTH FIELDS	10%
5.	DEVELOPMENTS IN AEROSPACE	8%
6.	DEVELOPMENTS IN THE AREA OF ENVIRONMENTAL PROTECTION AND CONTROL.	7%
7.	DEVELOPMENTS IN COMMUNICATION	6%
8.	DEVELOPMENTS IN THE AREA OF AGRICULTURE	6%
9.	THE TRANSITION TO METRICS	2%
10.	CHEMICAL ADVANCEMENTS	1%
11.	THE UNDERSTANDING OF HUMAN BEHAVIOR	1%
12.	MICROTECHNOLOGY	1%
13.	NONE.	1%

INDEPTH RESPONSES

Question #1

The responses to the question, "What future technological and scientific advancements will influence occupational education?" were grouped into the following categories:

Alternatives in energy and labor saving devices

Machinery, equipment, tools and construction techniques

Medical and health fields

Transportation

Environmental protection and control

Aerospace

Communications

Metrics

Agriculture

Chemical

Understanding of human behavior

Microtechnology

The technological and scientific advancements mentioned most frequently were the development of alternatives in energy and labor saving devices. Respondents stated concern over our diminishing natural resource supply and suggested that alternative sources of energy and its utilization will affect occupational education. Examples of energy sources are coal gasification, coal liquification, solar energy, nuclear energy, petroleum, and electrical energy. The respondents spoke of mechanization replacing human skills, common examples were computers and other electronic devices. One such device is the electronic scanner used by supermarkets to transmit food costs into computers. This method allows the customer to check out faster, requires less energy on the part of the cashier and has the capacity to take inventory.

Partially as a result of new machinery, equipment and tools, new construction techniques were predicted to evolve. However, the respondents suggested other variables which would also influence these new construction techniques. A lack of natural resources will constitute the need for better insulation. Population growth will result in the maximization of efficient land usage. Additionally, life styles as a result of social changes, will necessitate construction innovations.

The medical and health fields are predicted to make significant advancements. These advancements will be directly related to the development of new instruments and drugs, again affecting vocational education.

Transportation is another area in which innovations will occur. Changes will take place affecting all aspects of transportation. Alternative energy sources will result in the development of new engines, an example being the electric car, perhaps powered by solar energy. Mass transportation methods will be altered drastically, not only for community travel, but for nation or world wide travel.

Enviromental protection and control is expected to significantly affect occupational education in the future. Developing methods of conserving natural resources is imperative. Modifications in emmission control standards, engines used for transportation, housing design, and the efficient utilization of recycable materials will be visible evidences of the conservation of natural resources.

Progress in the area of aerospace travel may produce beneficial methods in which satellites can monitor crops, weather, moisture, disease, and insect problems. Space travel may be commercialized for inter-planetary travel or for communication purposes.

Radio, television, and other modes of communicating have been forecasted to change. Basically the change is directly related to advancements in the area of electronics and the miniaturization of various components. One respondent commented that fiber optics will make cable television available to everyone; all televisions having the capacity for 20 or more channels.

Agriculture was expected to exhibit major changes partially resulting from an attempt to keep pace with food supply and demand. Satellite usage has already been mentioned; however, other developments in agriculture were projected such as fertilizers, new growing techniques, crops and livestock varieties resistant to disease, and the utilization of the sea as a source for food. Agriculture may also be affected by the use of chemicals to produce food, which may result in chemical substitutes for traditional food products.

Two other aspects believed to be relevant to future occupational education were the conversion to the metric system and the advancements in the understanding of human behavior. No specific examples were given in either of these areas.

Question #2

In response to the question, "How will social changes alter future education in Kentucky?" many respondents stated that a de-emphasis on the college education and an increase in the social acceptance of occupations requiring vocational training will change education in the future. The reasons for such statements are various. One respondent said that it did not make much sense to spend numerous years in college when a vocational program could result in an equal paying job. Because of the materialistic needs of individuals, earning a paycheck as early as possible is important. In other words, respondents emphasized the need for people to provide for themselves and perhaps vocational education is the means by which people could provide for themselves and their families. However, the most frequent reason for the increase in the status of occupations requiring technical training is due to the increasing demand for those occupations. As many of the respondents stated, "It is a matter of supply and demand."

Another large portion of the respondents believed that a change in the role of sexes will alter future education in Kentucky, specifically because men and women are working in non-traditional positions. When the second Delphi Questionnaire sought further clarification, the vote was split. Some respondents agreed that the role changes of the sexes would alter future education in Kentucky, others believed that occupational education would not be affected since job skills remain the same whether a male or female is learning or performing a skill. Other respondents commented that occupational education would definitely result in change due to the increased enrollment of women into occupational training programs.

An increase in the amount of leisure time is another variable which respondents felt may influence future education in Kentucky. The development

of labor saving devices may be the cause for the increase in leisure time. Some respondents were concerned about the utilization of their leisure time and suggested that leisure time training be incorporated into educational programs.

Population was cited as a social change that will affect occupational education. Some respondents stated that the birth rate would be an influence; however, they did not suggest specific reasons for this influence. Respondents also suggested that population mobility, the movement to rural areas, to urban areas, and the general romadic existence of most Americans would influence occupational education.

Question #3

Many of the respondents answered the question, "How can occupational education improve the quality of community awareness and involvement?" by stating that occupational education should interact more with the community and its resources.

Several methods of interaction were suggested. Advisory committees could be set up to serve as a liaison between vocational programs and business and industry. The committee might consist of local citizens, employers, employees, vocational education students, vocational educators, parents, and other constituencies throughout the community.

Placing the vocational student in the community would make the product of vocational education more visible to the public. Many respondents suggested "on-the-job training" where the vocational educator would go into the community to train individuals. Other respondents suggested co-op programs in which the student spends part of the time in class and part in a job in the community. Both methods of program delivery provide for cost effectiveness.

Respondents expressed the need for a public relations program in occupational education to educate the community. Respondents advocated that opportunities available in occupational education be communicated through speakers being sent to schools, parent organizations, civic organizations, business organizations, and other constituencies within the community.

Other than increased interaction with the community and its resources, only one additional major category of response remained. This response concerned the idea that the community will become more aware of vocational education only when vocational education begins producing skilled, employable individuals capable of holding responsible positions in the community.

In synopsis, the respondents voiced the need for occupational education not to isolate itself but to become involved in the community in decision making and planning and to make its product, the student, highly visible.

Question #4

In response to the question, "What role will local, state and federal government play in future occupational education programs and funding?" an overwhelming majority stated that local, state and/or federal government will play greater roles in future occupational education programs and funding. Many respondents communicated the need for expenditures of monies from federal and state government to be allocated by local government because local government is more in touch with community needs. Respondents expressed concern that bureaucracy would take away local control instead of serving only as a catalyst.

A smaller group of respondents suggested that local, state, and federal government will insist, in the future, on accountability for program funds.

Another group of respondents were optimistic that the role of local, state and federal government will be dictated by society.

Question #5

Responding to the question, "How should occupational education react to future occupational trends and innovations?" the majority of respondents contended that occupational education should become aware of occupational trends and innovations, carefully evaluate them, and alter programs as needs change. A majority of respondents elaborated on the need for expediency in the continual updating of occupational programs.

The respondents believed occupational education should become involved with research, planning, and the implementation of pilot programs in an attempt to initiate appropriate innovations in occupational programs. Research and the evaluation of present and future occupational programs could be conducted in cooperation with industry in order to add and delete programs. Occupational educators could anticipate the trend of labor and the professions through reading U.S. Labor projections and state and local projections issued by the Kentucky Department of Labor. One respondent indicated that through a joint committee composed of representatives from business, industry, education, and government, the trends and innovations could be defined. After setting priorities within the limits of funding, plans could be implemented for offering new occupational programs. One suggestion offered by a minority of respondents to allow for quicker implementation and reaction to employment needs was the simplification of administrative details so that delays caused by existing regulations do not occur.

Conversely, several responses dealt with the need for slow innovation preceded by a proper evaluation of job trends. According to these respondents, caution and patience should be the rule in innovation accompanied by adequate testing and research. Several respondents also emphasized preparing students for a general field and teaching general principles since the basis for many

occupations remains the same and students with a basic education will be suitable raw material for final on-the-job finishing. Specializing, they say, limits the mobility of students. Also, new technology will become increasingly expensive and the hardware (equipment) will not always be available to the schools as soon as it is adapted by industry.

A predominant response concerned the need for more facilities, specifically, more trade, vocational, and electronic schools, and up-to-date equipment. The recruitment of effective instructors and personnel to incorporate new technical knowledge and methods into the instruction was also expressed as an area of current need in occupational education. To achieve an influx of new technical knowledge the recommendation was made that vocational teachers be required to re-train on-the-job at intervals and be paid while updating their occupation. Another recommendation was that vocational teachers and personnel organize to develop methods of dissemination of information and materials.

Respondents enumerated various occupational areas which they believed occupational education should be concerned with both currently and in the future. Solar energy programs, artificial body part making and repairing (auto), calculator servicing, data processing, medical technology, child care, and the repairing and operation of machines were areas in which students should be preparing. A method of instruction for teaching these and other occupational areas was suggested. The use of modules or a similar instructional method was recommended for teaching occupational areas so that a student can elect the desired skills and reduce the time and non-essentials for meeting his or her goal.

Question #6

In answering the question, "How can occupational education better meet the needs of minorities, disadvantaged and handicapped?" many respondents suggested screening the skills of these individuals and upgrading their programs by funding the instructors and facilities required. Emphasis was placed on providing training they could use and which would meet their basic needs and skills for productivity. Many felt that funding could provide special programs, on-the-job training, low cost instruction, and make it financially possible for all to receive the training needed.

The second most frequent response concerned the need for incorporating occupational education into the general education of minorities, disadvantaged, and handicapped in order to enrich and make their academic educators more practical and relevant. In this way, individuals have a free choice of what they want to learn and what can best improve their lifestyle.

Rehabilitation centers teach occupational education with excellent results and the better the program is taught the more the individual can help himself. By upgrading the educational system, learning would become a greater experience in which results could be obtained.

Another frequent response concerned the equal treatment of these groups by not providing any special programs, by disregarding the existence of these people and setting up programs that will meet everyones' needs, whatever they may be. Respondents stated that these groups do not want to be put in a special category or isolated from the everyday learning situation; instead, they want to be thought of as "normal" people.

A smaller number responded by saying that no other improvements can be made for these individuals. The instructors are available, the facilities are accessible, and the initiative must be shown now by these disadvantaged groups to utilize these facilities.

Laws have been enacted to insure equality of educational opportunity, and industry is starting to increase its cooperation with the Department of Education to insure that programs are formulated to enable these groups to obtain meaningful employment, job security, and social mobility.

A few respondents said that more publicity is needed to make these individuals aware of the programs available and that opportunities for employment after completion of the training be insured. Others stated it would be important to involve these people in decision making and planning processes for new programs and facilities.

Question #7

Responding to the question, "In your opinion, how should occupational education be taught in the future?" a majority of the respondents predicted there will be greater cooperation with local business and industry. Emphasis was placed on work-study, cooperative education and others on-the-job training experiences. Practical learning experiences for the student rather than an over emphasis on theoretical instruction was considered most important in preparing students for specific vocations. Many believed vocational teachers needed a perspective of future job market needs.

The second most frequent dealt with the need for individualized, competency based education. Respondents stressed the need for developing student skills and competencies which correspond with the competencies needed for performing tasks in specific job responsibilities. Skills may be taught in a modular, programmed learning situation in which students progress at their own rates and according to their own goals and abilities.

Another frequent response concerned the incorporation of occupational education and career exploration into the regular educational program beginning in elementary school and continuing through high school. Occupational education, the respondents stated, should be encouraged with the same zeal, and enjoy the same status implications that academic education now holds. Students who are not academically inclined need guidance into occupational education and placement services after high school.

Several responses appeared in the results less frequently. Some respondents emphasized the necessity of occupational education striving to keep abreast of the trends and needs in the immediate community. Others emphasized the importance of utilizing the multi-media approach in the teaching of occupational education, and combining practical course work with didactic material.

Question #8

In response to the question, "What will be the most difficult problem for future occupational education?" the most frequent comment dealt with funding presenting the most difficult problem in order that vocational training be responsive to trends, change, and supply and demand. Funding will have to keep pace with scientific, technological, and social advancements.

Securing qualified trained teachers and administrators will be another problem faced by occupational education. Respondents stated that certification requirements will prevent the employment of the most qualified personnel. Some applicants may have the necessary college requirements, but not the important employment criteria of practical experience. An additional problem with securing qualified personnel is the procurement of adequate salaries. The more qualified individuals from the various areas of occupational education can make higher salaries in their fields than in the classroom, thus, many choose to stay in their fields.

The public acceptance of vocational education presents another problem which has been dealt with in detail in questions number three and ten. Placing students into appropriate occupational programs and determining the criteria for placement often presents difficulties.

Finally, delivering programs to minorities, disadvantaged and handicapped is also a problem for future occupational education, which is an issue covered in more depth under question number ten.

Question #9

The majority of respondents answered the question, "What occupations do you see being eliminated, in your field, in the next five years?" by stating that they foresaw no occupations being eliminated but many being altered as technology expands.

Several specific examples were presented of occupations that will be altered. In the personnel field, an expansion of duties is expected to include training for the handling of new government laws. In engineering there will be a need for people to translate information from the new electronic equipment into a usable form. Occupations in the mining field are changing and expanding. The general duty of a licensed practical nurse and registered nurse will need more specialization. Child care workers will be upgraded, there will be continual re-training of automobile mechanics, and more training in the use of all types of machines. In the field of marketing and distributive education, an increase in training programs operated by the individual business is anticipated.

The respondents noted several occupations that will be playing smaller roles in the future if not being actually eliminated. The occupations expected to diminish in importance were those related to small engine and appliance repair, i.e.; office machines, small household appliances, television, and radio. Another occupational area expected to decrease is unskilled labor including maintenance and domestic positions, stoop labor and tedious assembly jobs, and restaurant personnel such as dishwashers, busboys, waiters, waitresses, and independent or small restaurant owners.

In the area of office occupations, stenographers, file clerks, typists, keypunch operators, manual bookkeepers, and hot-type machine operators are expected to play smaller roles in the job market. In the health occupations,

the general duty nurse and nurse's aides will be needed less as medical care becomes more specialized and as personal medical care becomes computerized.

Drafting, some areas of printing, and other forms of the graphic arts were common responses. In the agriculture industry, unskilled farm labor and tenant farmers are disappearing as are small farms and other kinds of small businesses. In the banking industry, a few respondents stated there will be fewer entry level clerical jobs, administrative and customer service jobs, and positions which may be absorbed by data processing. Other minority responses dealt with occupations such as telephone operators, oxyacetylene/welding, general barbers, teacher's aides, shop and laboratory teachers, service station attendants, salesmen in basic industries, woodworkers, building tradesmen, those who alter clothing, and finally respiratory therapists and dental assistants as the market is expected to be filled in a few years.

Question #10

In response to the question, "Should everyone have greater access to occupational education than they presently have?" the majority of respondents believed occupational education should be more available and people made more aware of its opportunities.

Many stated that until recently the college ethic and the traditional academic education have been emphasized to the exclusion of a practical education which is oriented toward earning, surviving, and fulfilling. Labor demand is now for technically trained workers and the need will continue to expand as individuals demand better jobs and industry demands better qualified workers. Thus, the need for higher levels of education and skill through formal education and training continues to increase.

Many explained that occupational education is not communicating with the people who need to be aware of the benefits available in occupational education. The unemployed, the underemployed, parents, high school teachers and counselors business people, and legislators all need to know the advantages of the occupational education as well as the academic education. Some stated that a public relations program is needed to enhance the image of occupational education. Other respondents stated that too many people were unhappy in their present jobs primarily because they were unaware of the alternatives available to them.

A common response concerned the need for guidance counselors to realize that all students can benefit from occupational programs, including college bound students. Adequate access to occupational education exists but better guidance is necessary to insure that students are placed in training they are fitted to do and they are advised where to receive training in the occupation of their choice.

Many respondents emphasized the need for exposing high school students to occupational exploratory programs and occupational education. Students should

be shown a practical occupational context in which his or her skills may be vocationally rewarding. Relating a student's education to a specific goal may result in stimulating a student to explore many careers and learn the requirements for success in a major job classification. Presently, a lack of variety of courses offered locks students into one area for two years of high school and inhibits them from exploring many different career opportunities. Some respondents expressed the idea that drop outs may be kept in school if they have a goal or occupation to work toward and if the students believed they could be gainfully employed after graduation. A recommendation was made concerning the need to establish and improve placement services for youth.

Several respondents contend that occupational education is not equipped, funded or staffed to meet the demand. People have access to occupational education, they state, but only after long waiting periods. Funds are needed for more extensive use of facilities and for the employment of quality staff.

Several suggestions are made concerning the use of occupational education facilities. Night classes as well as day classes may be offered to provide flexible and diverse time schedules allowing individuals to pursue occupational training. Mobile training units could take occupational programs "to the people", eliminate some duplication of expensive pieces of equipment, and conceivably meeting the needs of minority groups, disadvantaged, and handicapped more effectively. One suggestion involved the implementation of the regional cluster approach so that students could travel to the school offering the course or occupation they want to pursue. The regional cluster approach may also make educational opportunities equitable for many students in several area schools.

A minority response dealt with the need for greater access to occupational education but not on a no tuition basis, since a reasonable charge lends

dignity and value to the educational experience. The cost should be, however, attractive to both individuals and employers.

Some responses expressed the idea that greater access could reduce welfare because it increases marketable skills and converts those who are willing to work from tax burdens into tax payers.

More on-the-job, or co-op training programs might give greater access of occupational programs to those individuals locked into a job because of income needs and offer them the opportunity to upgrade themselves into a better type of employment without taking time out for educational training. One recommendation was to allocate a specified amount of post-secondary occupational education for each individual to be used sometime during his or her lifetime and not necessarily immediately upon the completion of high school.

Finally, a minority response dealt with the idea of the work ethic enhancing human satisfaction yet some respondents believed industry has denied this human need for achievement to the handicapped and also, through forced retirement, to senior citizens.

4. & 5. CONCLUSIONS AND RECOMMENDATIONS

WHAT FUTURE TECHNOLOGICAL AND SCIENTIFIC ADVANCEMENTS WILL INFLUENCE OCCUPATIONAL EDUCATION?

Recommendations do not necessarily focus on specific technological and scientific advancements but are concerned with the broad categories of such advancements and their implications to vocational education. The most frequent response solicited by this question was alternatives to energy and labor saving devices. From the awareness standpoint and from the teacher preparation standpoint, curriculum must be more reflective of these developments. For example, Kentucky has recently involved itself with coal liquification plants and gasification plants. Vocational education should be reflective to what skills are involved in operating these plants. Vocational education should be producing individuals with skills to construct such plants, produce and maintain monitoring instruments, interpret monitoring instruments, and other individuals which allow for the flow of progress at the plant.

There should be a system of communication set up whereby new equipment, machines, tools, innovations for business and industry be shared with the various levels of vocational education so that the planners and administrators can implement relevant programs to meet specific needs.

Additionally, vocational educators in the construction fields should concern themselves with new materials, new methods, and techniques of construction which will conserve natural resources.

Vocational education should broaden the concept of transportation from auto body repair or auto mechanics to other aspects of transportation. For example, repair persons, who are involved with a form of mass transit, are needed in most metropolitan areas to periodically inspect and repair, as an example, elevators in public buildings. At present this training is done by elevator manufacturing companies.

Vocational education should respond to the practitioner for technological restraining in the area of auto mechanics, enabling them to meet the standards of emission control set forth in federal guidelines. Midas Muffler workers could be trained to install catalyic converters, as an example.

Rather than training people at the university's four-year program level, some of the two-year post-secondary programs should gear themselves for higher level skills than they presently are. In many cases not only do certain professions require formal professional training, they also require passing certain standardized tests. Thus, not only should these two-year post-secondary programs produce individuals with entry level skills, but technicians of very high calibre also. One such example is the aircraft mechanic, this person must satisfy certain requirements, including tests to be certified by the FAA.

It is recommended that construction trade groups familiarize themselves with installing, monitoring, and maintaining solar energy panels in business, industry, and other private and public sectors. This method of energy production may be as common in communities as the electric lightbulb.

Vocational education has a great void in the areas of computer repair, installation and maintenance. We have the basic components of electronics instruction perhaps this area should broaden its scope to include computers. One of the main variables involved with the high cost of computer installation and maintenance is the accessabilities of qualified service persons. Our society is definitely switching from a materials-goods producing society to a service oriented society. Vocational education needs to begin to gear itself toward that direction and emphasis. The use of computers is becoming very commonplace. A typical example of technology creeping up on us is exhibited in the development of the plug-in diagnostic unit in automobiles. The auto mechanic is going to be confronted with the understanding and analysis of

computers within the next ten years. Grocery stores, department stores, restaurants, fast food chains, gas stations are other examples of places which are incorporating computers to maximize service and minimize manual labor.

Agriculture is another field which respondents frequently mentioned. Technicians should be trained through vocational programs to handle new products such as new fertilizers coming on the market, new techniques of soil analysis, and the modification of soil to gain optimum crop production. Agricultural technicians need to know how to utilize crop and livestock medicines which provide for resistance to disease. However, these new techniques and methods used in agriculture must not be detrimental to the surrounding environment.

HOW WILL SOCIAL CHANGES ALTER FUTURE EDUCATION IN KENTUCKY?

Kentucky is a growing state. It has several metropolises developing; principally Louisville, Lexington, and Covington. A large number of people are returning to Kentucky who were at one time native to the state but have moved into the northern states or eastern-seaboard states only to return as opportunities in Kentucky increase. These individuals are going to demand an educational system similar to what they are accustomed to in the areas they are migrating from.

Some of the respondents indicated that the new emphasis on the roles of the male and female entering the world of work will have an influence on future vocational education. The major concern is not that of curriculum change or skills taught; rather, the methodologies used need to be modified to accommodate the increased enrollment by women. Additionally, some areas of vocational training should prepare themselves for increased enrollment by males in predominately female occupations and females in predominately male occupations. One such area is the nursing field where male enrollment has increased. Other examples of the sexes entering non-traditional positions are visible daily.

The increased amount of leisure time is felt to be a social variable influencing future occupational education. Because of the developments in labor saving devices and mechanization mentioned earlier, people may be working shorter days or shorter weeks. Whatever the cause may be, the increase in leisure time was a concern of the respondents. In relation to vocational education, they need to gear themselves to training people for better utilization of leisure time. This also has implications for business and industry; they could develop programs to better meet the needs of those employees who are idle. Business and industry could provide leisure time activities, as many have, for a dual purpose: to provide for the mental and physical well being of their employees--perhaps resulting in a more productive worker.

This increased leisure time suggests another affect on occupational education, one not so direct. A greater emphasis on the recreation industry in Kentucky could provide for the needs of those individuals having access to more leisure time. Vocational education, then, should be more responsive to such programs as hotel/motel management, restaurant management, campground management, golf-course management, and the entire field of recreation. Maybe attention should be given to the training of conservation officers, or game warden type positions.

A decreased emphasis on college training and more emphasis on occupational training may have the same affect suggested by the change in the roles of the sexes. More people are going to go into vocational education programs. Thus, the recommendation being a new emphasis at the state level for new vocational facilities development and teacher preparation for those facilities.

WHAT WILL BE THE MOST DIFFICULT PROBLEM FOR FUTURE OCCUPATIONAL EDUCATION?

The most difficult problem for vocational education is to keep pace with new technological and scientific advancements. This problem can be resolved only if legislative agencies are responsive to the monitary needs of vocational education programs. Kentucky is already alloting a large portion of its funds to education and still the monetary needs are not met. Thus, alternative sources for funding must be considered. Other sources might include federal funds, funds through public service programs geared somehow to education, and private funding from business and industry. With Kentucky being the largest coal producing state (accounting for approximately 10% of its tax revenue) there is great potential for attracting new industry, thus increasing the states tax revenue.

At present the state does not have primary control over education in Kentucky. Perhaps there is a need to pass legislation which would ensure competent fiscal management and control, plus accountability factors at the local, regional, and state levels.

WHAT OCCUPATIONS DO YOU SEE BEING ELIMINATED IN YOUR FIELD IN THE NEXT FIVE YEARS?

The most frequent response was that there would be no new fields or no fields being eliminated in the next five years. However, there would be a number of fields that would be altered in their content to meet the needs of a changing technology. The recommendation would be that vocational education change its content to reflect current trends in business and industry. The local programs, through their needs assessment system, be responsive to delete, modify and add programs indicated by the responses to that needs assessment.

HOW SHOULD OCCUPATIONAL EDUCATION REACT TO FUTURE OCCUPATIONAL TRENDS AND INNOVATIONS?

Occupational educators should become more familiar with occupational trends and innovations. It is these trends and innovations which will evolve to be the occupations in the future. Based on these changes occupational education must gear itself to constantly keep pace with the needs of business and industry. Many technological advances preclude a long duration of development. Program development and implementation needs must be met immediately; schools should be able to keep abreast and meet these pressing needs as soon as possible. A mechanism should be developed whereby meeting the needs does not become a very costly procedure of training faculty and providing facilities. By occupational education involving itself with the community and its resources, a greater cost effectiveness in program implementation and maintenance would result. Rather than a school buying the latest typewriter or cash register, the school should take advantage of the availability of those presently in the community. The students could learn the basic skills on older equipment, then become more advanced on newer equipment throughout the community. Again, the recommendation is a cooperative program between the schools and the community.

The vocational programs now in existence should be evaluated in cooperation with industry to assure that they are meeting the needs of industry. Evaluation may result in the addition, deletion or modification of vocational programs. In order for this evaluation to take place vocational education must allot a portion of its money and resources for on-going research of pilot programs. For example, a computer maintenance program could be implemented in Louisville and if proven to be successful, similar programs could be implemented throughout the state.

Students should be taught utilizing the cluster approach rather than a specific finite approach. This is necessary because technology moves at such

a rapid pace. Fundamental educational procedures and processes may or may not be suitable for new innovations that come along hereafter. New technology will become increasingly expensive and much of the hardware will not be available to the schools; therefore it is again suggested that the community literally become a part of the school.

Another recommendation is that vocational education faculty be required at certain intervals to spend a certain amount of time in retraining and being paid during this interval. This is being done to some degree in staff exchange, however, the total number of vocational teachers that this program is reaching is almost insignificant in comparison to the number of the vocational teachers in the state.

Vocational education curriculum and programs should address itself to the fact that in 1980 or 1990 most people may change jobs as many as five times and may be trained or retrained as many as three or four times. An awareness of career and job mobility should be a part of vocational education. Perhaps an increase in the utilization of individualized, modular instruction would be a beneficial method of increasing skills at a reduced rate of time and money. Rather than preparing only entry-level employees, individuals should also be trained for what is going to happen after five, ten, or fifteen years on their occupation.

In addition to keeping abreast of future trends and innovations vocational education could concern itself to a greater degree with graduate follow-up studies. These studies should be beneficial in the evaluation of programs.

It is not only the responsibility of the state and the teacher-training institutions to keep pace with all social and technological change, but also the responsibility of every element within the educational system. This responsibility has to be de-centralized. Keeping pace with changes is an

obvious component of business and industry otherwise bankruptcy would result. Likewise it should be the responsibility of each individual involved with occupational/vocational education.

HOW CAN OCCUPATIONAL EDUCATION BETTER MEET THE NEEDS OF MINORITIES, DISADVANTAGED, AND HANDICAPPED?

It is recommended that screening devices be utilized to determine specific handicapping conditions, and strengths and weaknesses of those individuals. Such screening devices could be used by vocational counselor to determine various vocational tracks for individuals. The screening devices should not only be used with the disadvantaged and handicapped but also the non-disadvantaged and the non-handicapped. Occupational/vocational education should, but will not--according to several respondents--be for those individuals who cannot make it in the academic track; occupational/vocational education should be for everyone who has the desire to learn a skill or trade. Perhaps once the stigma associated with vocational education is desolved more and more of the "academically intelligent" individuals will decide on such a route.

The mainstreaming of handicapped students into the regular classroom is a practice which is becoming more frequent. Not only should mainstreaming take place for academic programs but also for vocational programs. Many respondents felt that special facilities need not be provided for the handicapped student; rather, the handicapped student should be placed in a vocational setting along with non-handicapped students. A modification of the regular program may be necessary to allow for the handicapping condition of the student. Not only would they provide for a more normal learning experience for handicapped student, but also allows for greater cost effectiveness in program delivery.

Every educational program in Kentucky should incorporate vocational education, beginning at an early age. Vocational education should expand itself to involve the elementary school. The basic skills taught in the elementary schools should be modified in order to make them relative and practical to the working world. Thus, elementary schools should not only take into consideration the college bound student, but also the vocational education bound student.

One means of incorporating vocational education into elementary schools is to make students aware of occupational alternatives. Occupational awareness can be increased via incorporation with reading, math, and social studies curriculum. Such programs are necessary to enable the disadvantaged and handicapped student in making wise career decisions.

WHAT ROLE WILL LOCAL, STATE AND FEDERAL GOVERNMENT PLAY IN THE FUTURE OF OCCUPATIONAL EDUCATION?

Many respondents suggested that local, state, and federal governments will concern themselves more with the funding of vocational programs. In order for these funds to be utilized effectively, policies and procedures need to be flexible enough to meet local demands. Bureaucratic control could extinguish this flexibility unless the bureaucrats involve themselves with those agencies which are aware of local needs. Federal and state government must realize that needs are inconsistent throughout the state, what may be applicable in a metropolitan community is not necessarily applicable in a rural community. Local constituents and state constituents should make effort to ensure that local government have the major control over federal and state fundings.

Control is not the only means of flexibility; alternate funding pattern may also be utilized. The typical funding pattern is from fiscal year to fiscal year. Not all programs can be accomplished in a calendar year, which could result in a decrease in the quality of many programs. Additionally, many programs do not need a whole fiscal year for completion, thus, another instance where flexibility is recommended. Many vocational schools or systems are receiving close to 30 or 40 percent of their program funding through external sources which usually are guaranteed for a maximum of one year. It is very difficult to develop curriculum, employ and train staff, and make placement with only one year's funds. There needs to be funding patterns that go 3, 4, 5 or even 10 years in length. With assurance of funds, adequate planning and preparation can be met.

At this time Kentucky does not have the option of local bonds for vocational or occupational education programs. There should be more options for local matching of monies. Matching funding could be beneficial for developing specialized programs for specialized needs.

With or without the flexibility in funding the element of accountability should not be overlooked. This element must be built into every existing vocational program across the Commonwealth. All teachers, administrators, and guidance personnel should be held accountable for the objectives they are hired to meet and promote.

HOW CAN OCCUPATIONAL EDUCATION IMPROVE THE QUALITY OF COMMUNITY AWARENESS AND INVOLVEMENT?

The simplist method of improving the quality of community awareness and involvement is to establish greater interaction between occupational education and the community. Many occupational education programs throughout Kentucky have isolated themselves from the community, except for acquisition of potential job placements. Several recommendations as the expansion of community interaction can be made.

On-the-job training--work-study programs--would not only increase occupational education's involvement with the community but would be beneficial to program delivery, methodology, and cost effectiveness. Implementing such programs places the student in the eyes of the public, thus, unvailing occupational education to the community.

Parents and student need to be made aware that there are alternative educational programs and that these programs yield skilled, employable, productive members of the community. The use of various media need to be utilized in order that the awareness of vocational programs keeps abreast with non-vocational programs, i.e., traditional academic programs. Also, the media could assist in breaking down the stigmi attached to vocational students. These students should no longer be perceived as individuals who could not make it in the academic programs; rather, they should be perceived as individuals seeking to be productive members of society.

The community needs to be educated as to the broad spectrum of programs which vocational education has to offer. Providing adult programs and incorporating the short course concept would increase the accessability greatly.

A public relation program should be a major component of vocational education. Providing vocational education programs constitutes only a part of vocational educations responsibility, making individuals aware of such program

constitutes another--both equal in importance. The emphasis must remain balanced; in order to have this balance in Kentucky more emphasis will need to be placed on public awareness.

The utilization of state, regional, and community advisory committees should be a concern for vocational education. Although many areas have advisory committees, based on the response to the Delphi Questionnaires, these committees are greatly under utilized. The utilization of such a committee could make vocational education more responsive to community needs.

A joint effort between local government and vocational education could prove to be very beneficial. Vocational education students could play a public service role. With local government supplying the funds, vocational education students could build community park facilities, renovate public facilities, or provide apprentice craftsmen to do work for those who cannot afford such services.

G. DISSEMINATION

Dissemination of the Project Results was determined to be the responsibility of the Bureau of Vocational Education. However, after consulting with Bureau representatives, it was recommended that a request for extension be submitted for the purpose of informing decision makers across the state of Kentucky of the results of this project. The letter requesting an extension is included in this report as Appendix G. Approval of this request is pending at the time of submission of this report.

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APPENDIX A

FORECASTING AND ANALYZING NEEDS AND BARRIERS

IN KENTUCKY VOCATIONAL EDUCATION

PROJECT PLANNING COMMITTEE MEETING

HOSPITALITY INN, LEXINGTON, KENTUCKY

A G E N D A

June 11, 1976

10:00 - 10:30	Coffee, Welcome, and Introductions Hospitality Inn - Kentucky Suite
10:30 - 11:30	Orientation to Project Dr. L. Dean McClellan Project Director Vocational Teacher Education University of Louisville Louisville, Kentucky Dr. Robert E. Newton Assistant Project Director Director, Field Careers Experiences Associate Professor of Cooperative Education Department of Industrial Education and Technology Morehead State University Morehead, Kentucky Dr. Glen Davis Research Coordinator Resources Development Unit Bureau of Vocational Education Frankfort, Kentucky
11:30 - 12:00	Charge to Planning Committee
12:00 - 1:15	Lunch - Hospitality Inn - Kentucky Suite
1:15 - 2:00	Presentation of Questions and Monitoring Techniques
2:00 - 3:00	Solicitation of Input from Committee
3:00	Adjourn

QUESTIONNAIRE

FOR DISCUSSION PURPOSES ONLY

KENTUCKY DELPHI

1. Is the present curriculum utilized by vocational education teachers at the secondary level, adequate to meet student needs?

2. What is the most valuable vocational coursework you can think of?

3. What is the least valuable vocational coursework you can think of?

4. Do you feel that secondary students, during counselling, are made aware of opportunities in vocational education?

5. What quality students are directed by counselors toward vocational education?

6. Do you feel qualified to counsel a student who comes to you with a serious personal problem?

7. Do you feel that administrators are sufficiently qualified in their knowledge of vocational education?

8. Do you feel that the vocational faculty is qualified in their knowledge of vocational education?

9. Are qualified service personnel available to serve the vocational program?

10. Are there sufficient funds in your program to realistically portray the world of work?

11. Are present school facilities adequate to simulate the work situation in business and industry?

12. Are present facilities adequate to meet instructional goals?

13. Do you feel there is relevancy in the general education program with regard to the needs of vocational education students?

14. Does present state legislation adequately support the vocational education program?

15. Does present federal legislation adequately support the vocational education program?

16. Is there representation of women in your faculty?

17. Are minorities represented on your faculty?

18. Do you feel that field experience aids the instructional program?

19. Do you take advantage of any computer assisted instruction in your classes?

20. Are you in favor of computer assisted instruction?

21. What is the degree of community awareness of school functions?

22. Is there community involvement in school functions?

23. Do you feel there should be more or less community awareness and involvement in school functions?

24. Do you have an advisory board?

25. Do you feel there are qualified people in your community to constitute an advisory board?

26. Are there sufficient job opportunities for the graduates of your program?

27. Can co-op students be placed in occupationally related jobs?

28. What should be the priority areas for vocational education research?

29. What changes would you make in vocational education in Kentucky if you had the power and the money?

30. Is the present curriculum utilized by vocational teacher educators in the colleges and universities adequate to prepare competent secondary and post-secondary teachers?

31. What area(s) of study would you pursue to enhance your professional qualifications as a vocational educator?

32. If you have taken college or university courses, would you eliminate any area(s) of study your program mandated?

33. What is the single most difficult problem you have encountered as a vocational educator?

34. What would you do to enhance students potential success in their chosen occupation?

1. Will Vocational Education play a major role in the educational development of the student in the year 2000?

2. Why will/will not Vocational Educational be an important part of educational development in the year 2000?

3. Will it be necessary to have a Vocational Education Program for elementary students?

4. Will Vocational Education be taught through middle or junior high school as a part of the regular curriculum?

5. Will high school Vocational Education become mandatory curriculum for its students?

6. What percentage of the students educational development from K-12 will Vocational Education be a part?

7. Will the future educators feel it necessary to make Vocational Education a larger or smaller part of the students curriculum?

8. Will academic standards for Vocational Education increase or decrease?

9. Will Vocational Education at the college level develop into a more technical field than what it is currently today?

10. Would you encourage your children to participate in a Vocational Education Program?
    A. If yes state why.
    B. If no state why not.

11. Will Vocational Education in high school be a part of the college preparatory curriculum?

12. Will Vocational Education be given equal status with other higher education programs?

13. Will there be newer and broader fields of study in the Vocational Education Program?

14. Will there be major emphasis placed on one part of Vocational Education? If so what part?

15. Will Vocational Education better prepare students for future occupations?

16. Will a higher percentage of Vocational Education students be employed than students prepared in other fields?

17. Will vocational training and instruction be on a higher than current level?

18. Will a Vocational Education graduate have a better chance of employment than other graduates?

19. Will field experiences play a bigger role of the Vocational Education student?

20. How much time will the Vocational Education student spend with on-the-job training compared to classroom time?

21. Will instructors of Vocational Education be the best trained and the best qualified professionals in their field?

22. Will Vocational Education be a major part in the adult and continuing education program?

23. Will women become a larger part of the Vocational Education Program?

24. Will federal, state and local funds become more abundant for the advancement of Vocational Education?

25. Will more scholarships and financial aid be available for outstanding Vocational Education students?

26. Will Vocational Education be readilly available to people of all income brackets?

27. Will Vocational Education be more available for the mental development and social advancement of the physically disabled?

28. Will Vocational Education help develop community awareness of Vocational Education?

29. Will a Vocational Education studdnt or graduate be able to make better use of his or her leisure time?

30. Will Vocational Education serve a major role in the rehabilitation of alcoholism, drug abuse, criminal adult minors, and other social problem areas?

31. Will the small business man be aided by Vocational Education through special services, night classes, and other methods concerning specific business problems?

32. Will Vocational Education expand to include all ethnic groups, races, and minorities?

33. Will the physical facilities of Vocational Education advance along with the other aspects of higher education?

34. Will Vocational Education provide adequate teaching supervision and administration throughout a students Vocational Education career from elementary to college?

35. In the year 2000 will Vocational Education have the same meaning that it has today?

36. Will the name "Vocational Education" continue to be used with its current meaning?

37. Will Vocational Education need begin to merge more with manpower needs?

38. What will be the relationship between post secondary Vocational Education Programs and post secondary college programs?

39. Will Career Education become a part of Vocational Education or will the reverse occur?

40. Will field or work experience become a mandatory, structural, and integrate part of Vocational Education?

DELPHI PLANNING COMMITTEE

AGENDA

10:00	COFFEE
10:15	INTRODUCTORY REMARKS DR. L. DEAN MCCLELLAN, UNIVERSITY OF LOUISVILLE
10:30	RESULTS OF THE FIRST DELPHI QUESTIONNAIRE RETURNS
11:00	DISCUSSION
12:30	LUNCH
1:30	UTILIZING RESULTS IN STATE AND LOCAL PLANNING, DR. ROBERT NEWTON, MOREHEAD STATE UNIVERSITY
2:00	DISCUSSION AND DEVELOPMENT OF A PLAN OF ACTION
3:00	ADJOURN

The following people attended the second Delphi Advisory Committee meeting in Lexington, Kentucky on April 11, 1977.

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APPENDIX B

UNIVERSITY OF LOUISVILLE
LOUISVILLE, KENTUCKY 40208

SCHOOL OF EDUCATION
OFFICE OF THE DIRECTOR
VOCATIONAL EDUCATION

BELKNAP CAMPUS

Dear Respondent:

Thank you for agreeing to participate in the Delphi study on projecting future needs and barriers for occupational education. Your insights will be most helpful in the application of this futuristic research technique. Specifically, we need your expertise and awareness to identify and explore needs and barriers of future occupational education programs.

Your responses will be collated and synthesized with those of other individuals in decision-making roles. All respondents will remain anonymous throughout the research project to assure independent results.

The "Delphi" technique encourages responses to be in a futuristic mode. Do not hesitate to use the total breadth of your imagination.

Please complete the enclosed questionnaire and return it in the enclosed envelope by _____1976.

Again, thank you for your help.

Sincerely,

L. Dean McClellan, Ed.D.
Project Director

LDM/kh

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Final reports and other materials on the following completed projects are available from the Research Coordinating Unit:

Articulation Project for Allied Health Professions

Developing a Distributive Education Internship Training Program

An Experimental Study to Determine the Impact of Career Maturity and Attitudes Toward School of Junior High School Students in Bullitt County

A Field Trial and Analysis of Selected Occupational Guidance Activities with Counselor Inservice Education

Forecasting and Analyzing the Needs and Barriers in Kentucky Vocational Education

Identification of Professional Competencies Needed by Vocational Administrators in Kentucky

Improving Teacher Competencies in Working with Disadvantaged and Handicapped Students: a Final Report of a Workshop

The Kentucky Vocational Education Placement and Follow-up System

The Mayfield Student Exchange Project

Mining and Reclamation Technology Co-operative Education Program

The Pennyrile Public Information Project Guidebook

A Report on Research on Competency Based Vocational Education in Kentucky

Research on Practical Arts Education

Vocational Education for the Disadvantaged and Handicapped

Final reports and other materials on these Career Education projects are available from Dorothy Alexander, Career Education Coordinator, Kentucky Department of Education, Frankfort, Ky. 40601:

Career Education Manual: Bowling Green, Kentucky

The Career Education Program for Region XII, Hazard, Kentucky

Development-Implementation of a Career Education Curriculum: Utlization of a Matrix Technique

The Effects of a Program of Career Education in Kentucky's Education Region XII: Phase II

Human Relations for Career Preparation

In an effort to disseminate the results of research and exemplary projects in vocational education to educators who can use them, we developed the INNOVATE system. These are brief abstracts of completed projects sent to individuals in the education community who work in areas directly related to the project activities.

People who receive INNOVATE are asked to mail back a postcard requesting a complete copy of the project report if they are interested in more information.

This document is one of the series of reports on research and development projects administered by the Bureau of Vocational Education, Research Coordinating Unit.